

What is claimed is:

1           1. An electrical safety connector fuse for insertion into an electrical  
2 socket having at least live and neutral prong receptacles, the connector fuse  
3 comprising:

4                 a sealed, tamper-proof housing having live and neutral apertures  
5 arranged to receive the live and neutral prongs respectively of an electrical plug;

6                 live and neutral prongs extending outwardly from said housing at points  
7 spaced from said live and neutral apertures, said live and neutral prongs being  
8 arranged to engage the live and neutral prong receptacles respectively of said  
9 electrical socket;

10                 a fuse disposed within said housing and electrically connected to said  
11 live prong;

12                 a live receptacle electrically connected to said fuse, and disposed  
13 within said housing adjacent said live aperture therein so as to engage the live prong  
14 of an appliance plug passing through said live aperture; and

15                 a neutral receptacle electrically connected to said neutral prong, and  
16 disposed within said housing adjacent said neutral aperture therein so as to engage  
17 the neutral prong of an appliance plug passing through said neutral aperture.

1           2. A connector fuse according to claim 1 for insertion into an  
2 electrical socket having a ground aperture and a ground prong receptacle, wherein  
3 said housing of said connector fuse has a ground aperture adjacent said live and  
4 neutral apertures and arranged to receive the ground prong of said appliance plug,  
5 said connector fuse further comprising:

6                 a ground prong extending outwardly from said housing adjacent said  
7 live and neutral prongs on said housing and arranged to engage the ground prong  
8 receptacle of said electrical socket; and

9                 a ground receptacle electrically connected to said ground prong, and  
10 disposed within said housing adjacent said ground aperture therein so as to engage  
11 the ground prong of a plug passing through said ground aperture.

1           3. A connector fuse according to claim 1 wherein said housing  
2 bears at least one marking indicating the rating of said fuse.

4. A connector fuse according to claim 3 wherein said at least one marking is at least in part in Braille.

5. A connector fuse according to claim 1 further comprising means for releasably securing said connector fuse to said electrical socket.

1           6. A connector fuse according to claim 5 wherein said securing  
2 means comprises a flange extending laterally from said tamper-proof housing, said  
3 flange having at least one aperture extending therethrough such that a fastener can  
4 be inserted through said aperture to secure said connector fuse to said electrical  
5 socket.

7. A connector fuse according to claim 6 wherein said flange is adapted to replace the face plate of a conventional electrical socket.

1           8. A connector fuse according to claim 1 wherein at least part of  
2 said housing is light-transmissive, said connector fuse further comprising means for  
3 emitting light disposed within said housing and adjacent said light-transmissive portion  
4 thereof so that light emitted from said light emitting means is visible outside said  
5 housing, said light emitting means being electrically connected to said live and neutral  
6 receptacles of said connector fuse so as to emit light when a potential difference  
7 exists between said receptacles.

9. A connector fuse according to claim 8 further comprising a resistor connected in series with said light emitting means between said live and neutral receptacles in said housing.

10. A connector fuse according to claim 8 wherein said light emitting means is selected from the group comprising an incandescent bulb, a light emitting diode, and an electroluminescent device.

11. A connector fuse according to claim 8 wherein substantially the whole of said housing is light-transmissive.

1                   12. A connector fuse according to claim 1 further comprising a  
2 blocking member disposed within said housing adjacent said live and neutral  
3 apertures therein, said blocking member having a neutral aperture extending  
4 therethrough, said blocking member being movable between a closed position, in  
5 which it blocks the live and neutral apertures in said housing, and an open position in  
6 which the neutral aperture of said blocking member is aligned with the neutral  
7 aperture of said housing, and said blocking member does not block the live aperture  
8 of said housing, thereby allowing said live and neutral prongs of said appliance plug to  
9 pass through said live and neutral apertures in said housing and engage said live and  
10 neutral receptacles within said housing,

11                   said blocking member being provided with biasing means for biasing  
12 said blocking member towards its closed position, said blocking member also having  
13 a cam surface disposed adjacent its neutral aperture and arranged to be engaged by  
14 said neutral prong of said appliance plug passing through said neutral aperture in said  
15 housing, so that contact between said neutral prong and said cam surface causes  
16 said blocking member to move to its open position.

13. A connector fuse according to claim 12 wherein said housing is provided with a closed internal chamber configured to accommodate said blocking member while permitting said blocking member to slide within said chamber between its open and closed positions.

14. A connector fuse according to claim 13 wherein said biasing means comprises a spring one end of which is accommodated with a spring recess in said blocking member.

15. A connector fuse according to claim 14 wherein said spring is secured to, or integral with, one of said receptacles of said connector fuse.

16. A connector fuse according to claim 12 wherein said cam surface has the form of an inclined surface defining part of the periphery of said neutral aperture in said blocking member.

1               17. A connector fuse according to claim 12 wherein said blocking  
2 member has a recess arranged so that, when the blocking member is in its closed  
3 position, the recess lies adjacent said live aperture of said connector fuse, so that a  
4 portion of said live prong of said appliance plug can be accommodated within said  
5 recess while said blocking member is still in its closed position.

18. A connector fuse according to claim 17 wherein said recess in  
said blocking member extends to a free edge of said blocking member such that,  
when said blocking member is in its open position, said live prong of said appliance  
plug will pass beyond said free edge of said blocking member.

19. A connector fuse according to claim 18 wherein said housing is  
provided with a recess arranged to receive said free edge of said blocking member  
when said blocking member is in its closed position.

1               20. A connector fuse according to claim 17 wherein said housing  
2 carries a projection extending away from an inner surface of said housing adjacent  
3 said live aperture therein and into said recess in said blocking member, said  
4 projection serving to hinder access to a wall of said recess by an object inserted  
5 through said live aperture in said housing.

21. A connector fuse according to claim 1 wherein said neutral  
prong of said connector fuse extends a greater distance from said housing than said  
live prong of said connector fuse.

22. A connector fuse according to claim 21 wherein said neutral  
prong of said connector fuse extends at least about 1 mm further from said housing  
than said live prong of said connector fuse.

23. A connector fuse according to claim 1 wherein said live prong of  
said connector fuse has an outward surface facing away from said neutral prong  
thereof, at least a portion of said outward surface being formed from an electrically  
insulating material.

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24. A connector fuse according to claim 23 wherein a tip portion of said outward surface remote from said housing is formed from said insulating material, a root section of said outward surface adjacent said housing being formed from an electrically conducting material.

25. A connector fuse according to claim 24 wherein the outward surfaces of said insulating material and said conducting material are substantially flat and coplanar.

26. A connector fuse according to claim 24 wherein said neutral prong of said connector fuse also has an inward surface facing said live prong thereof, a tip portion of said inward surface remote from said housing also being formed from said insulating material.

27. A connector fuse according to claim 23 wherein a tip portion of said outward surface remote from said housing is formed from an electrically conducting material, a root section of said outward surface adjacent said housing being formed from said insulating material.

28. A connector fuse according to claim 23 wherein substantially the whole of said outward surface is formed from said insulating material.

29. A connector fuse according to claim 23 wherein said neutral prong of said connector fuse has a outward surface facing away from said live prong thereof, at least a portion of said outward surface of said neutral prong also being formed from an electrically insulating material.

30. An electrical plug having a housing and live and neutral prongs extending therefrom, said live prong having a outward surface facing away from said neutral prong, at least a portion of said outward surface being formed from an electrically insulating material.

1               31. An electrical safety connector fuse for insertion into an electrical  
2   socket having at least live and neutral prong receptacles, the connector fuse  
3   comprising:

4               a sealed, tamper-proof housing having live and neutral apertures  
5   arranged to receive the live and neutral prongs respectively of an electrical plug;

6               live and neutral prongs extending outwardly from said housing at points  
7   spaced from said live and neutral apertures, said live and neutral prongs being  
8   arranged to engage the live and neutral prong receptacles respectively of said  
9   electrical socket;

10              a fuse disposed within said housing and electrically connected to said  
11   live prong;

12              a live receptacle electrically connected to said fuse, and disposed  
13   within said housing adjacent said live aperture therein so as to engage the live prong  
14   of an appliance plug passing through said live aperture;

15              a neutral receptacle electrically connected to said neutral prong, and  
16   disposed within said housing adjacent said neutral aperture therein so as to engage  
17   the neutral prong of an appliance plug passing through said neutral aperture, and

18              a blocking member disposed within said housing adjacent said live and  
19   neutral apertures therein, said blocking member having a neutral aperture extending  
20   therethrough, said blocking member being movable between a closed position, in  
21   which it blocks the live and neutral apertures in said housing, and an open position in  
22   which the neutral aperture of said blocking member is aligned with the neutral  
23   aperture of said housing, and said blocking member does not block the live aperture  
24   of said housing, thereby allowing said live and neutral prongs of said appliance plug to  
25   pass through said live and neutral apertures in said housing and engage said live and  
26   neutral receptacles within said housing,

27              said blocking member being provided with biasing means for biasing  
28   said blocking member towards its closed position, said blocking member also having  
29   a cam surface disposed adjacent its neutral aperture and arranged to be engaged by  
30   said neutral prong of said appliance plug passing through said neutral aperture in said  
31   housing, so that contact between said neutral prong and said cam surface causes  
32   said blocking member to move to its open position.

1               32. An electrical safety connector fuse for insertion into an electrical  
2   socket having at least live and neutral prong receptacles, the connector fuse  
3   comprising:

4               a sealed, tamper-proof housing having live and neutral apertures  
5   arranged to receive the live and neutral prongs respectively of an electrical plug;

6               live and neutral prongs extending outwardly from said housing at points  
7   spaced from said live and neutral apertures, said live and neutral prongs being  
8   arranged to engage the live and neutral prong receptacles respectively of said  
9   electrical socket, said live prong of said connector fuse having an outward surface  
10   facing away from said neutral prong thereof, at least a portion of said outward surface  
11   being formed from an electrically insulating material;

12              a fuse disposed within said housing and electrically connected to said  
13   live prong;

14              a live receptacle electrically connected to said fuse, and disposed  
15   within said housing adjacent said live aperture therein so as to engage the live prong  
16   of an appliance plug passing through said live aperture; and

17              a neutral receptacle electrically connected to said neutral prong, and  
18   disposed within said housing adjacent said neutral aperture therein so as to engage  
19   the neutral prong of an appliance plug passing through said neutral aperture.

1               33. An electrical safety connector fuse for insertion into an electrical  
2   socket having at least live and neutral prong receptacles, the connector fuse  
3   comprising:

4               a sealed, tamper-proof housing having live and neutral apertures  
5   arranged to receive the live and neutral prongs respectively of an electrical plug;

6               live and neutral prongs extending outwardly from said housing at points  
7   spaced from said live and neutral apertures, said live and neutral prongs being  
8   arranged to engage the live and neutral prong receptacles respectively of said  
9   electrical socket said live and neutral prongs being arranged to engage the live and  
10   neutral prong receptacles, respectively, of said electrical socket, said live prong of  
11   said connector fuse having an outward surface facing away from said neutral prong  
12   thereof, at least a portion of said outward surface being formed from an electrically  
13   insulating material;

14                   a fuse disposed within said housing and electrically connected to said  
15 live prong;

16                   a live receptacle electrically connected to said fuse, and disposed  
17 within said housing adjacent said live aperture therein so as to engage the live prong  
18 of an appliance plug passing through said live aperture;

19                   a neutral receptacle electrically connected to said neutral prong, and  
20 disposed within said housing adjacent said neutral aperture therein so as to engage  
21 the neutral prong of an appliance plug passing through said neutral aperture; and

22                   a blocking member disposed within said housing adjacent said live and  
23 neutral apertures therein, said blocking member having a neutral aperture extending  
24 therethrough, said blocking member being movable between a closed position, in  
25 which it blocks the live and neutral apertures in said housing, and an open position in  
26 which the neutral aperture of said blocking member is aligned with the neutral  
27 aperture of said housing, and said blocking member does not block the live aperture  
28 of said housing, thereby allowing said live and neutral prongs of said appliance plug to  
29 pass through said live and neutral apertures in said housing and engage said live and  
30 neutral receptacles within said housing.